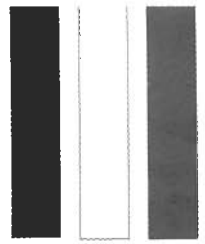
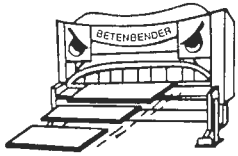


# parts catalog



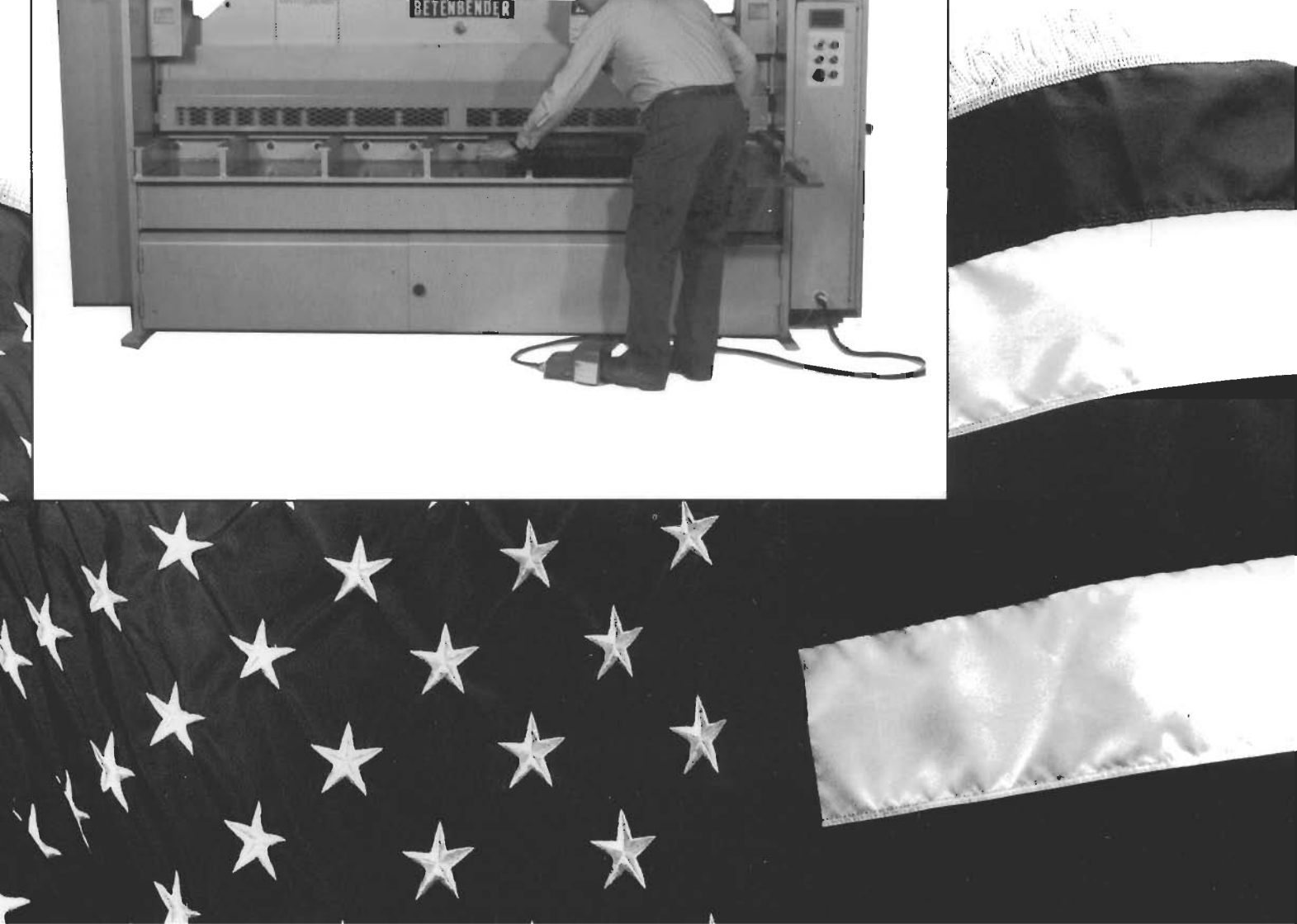
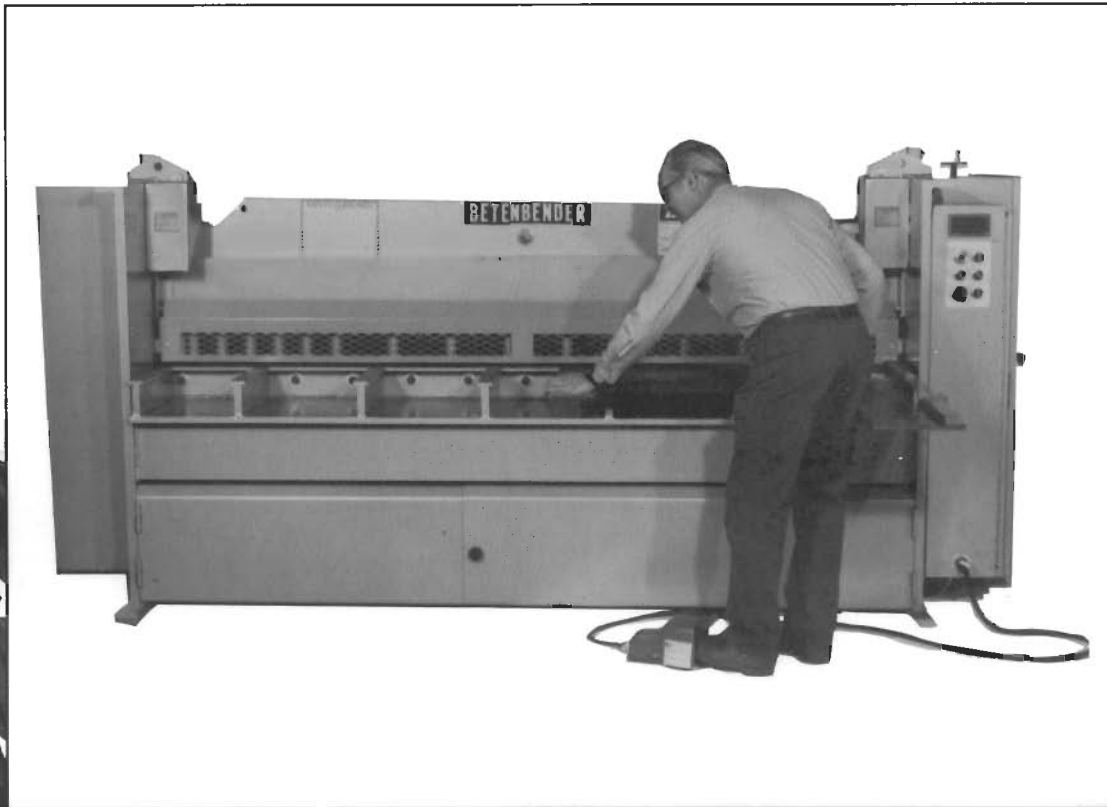
*The Betenbender  
Family of American  
Shears*



MANUFACTURED BY BETENBENDER

# SHEARS

THE SIMPLE SOLUTION



# BETENBENDER MFG., INC.

## SHEAR PARTS LIST

### *1/4", 3/8", 1/2", 5/8" & 3/4" PARTS LIST*

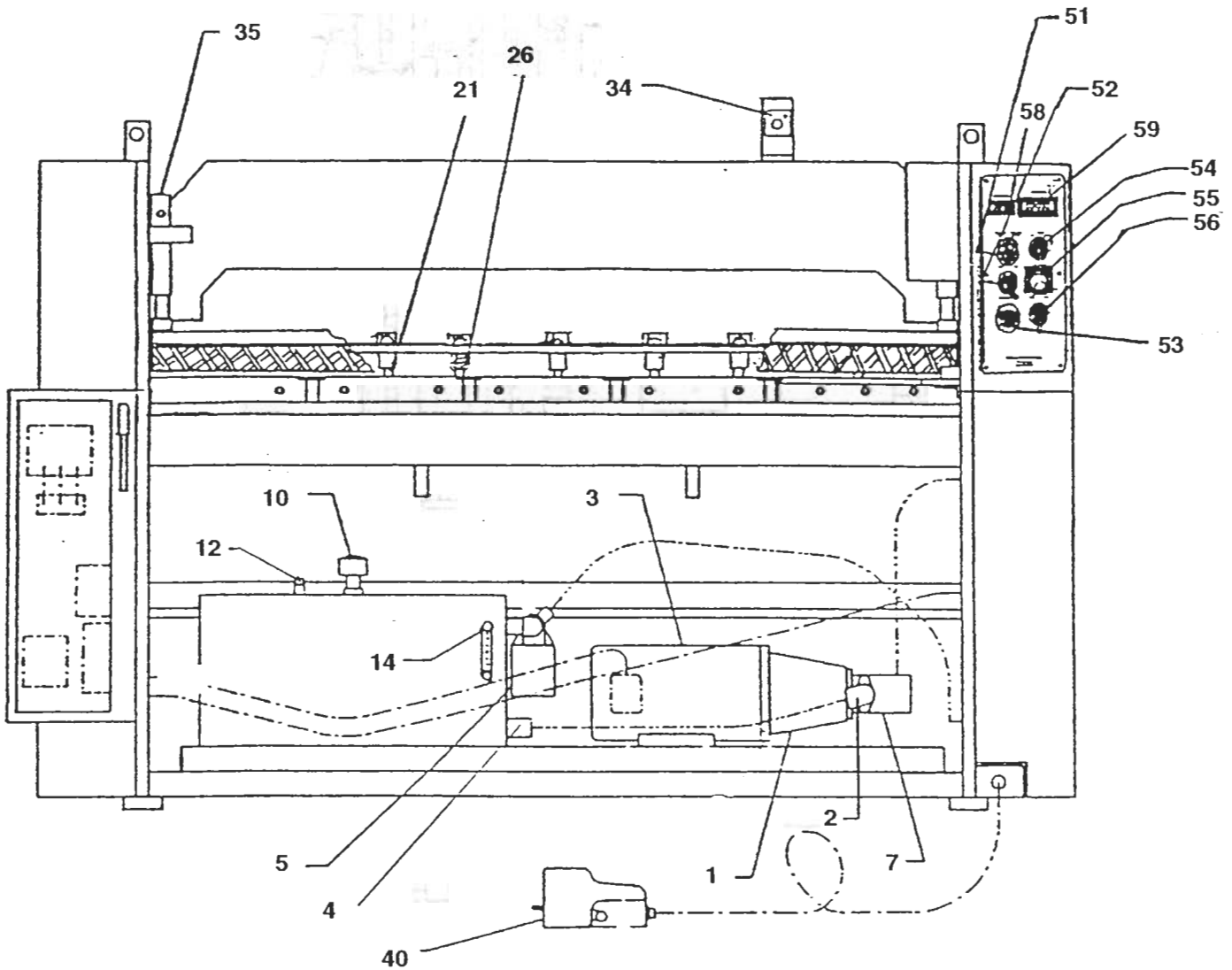
Backgauge .....	pages 62, 66, 67, 68
Table Top w/Options .....	page 63
Standard Manual Blade Gap & Power Rapid Blade Gap .....	page 64
Main Block Assembly .....	page 70
Control Panel .....	page 65
Electrical Controls .....	page 71

### *10 GA. & 3/16" PARTS LIST*

Index for 10 ga. ....	page 56
Front View .....	page 57
Left Side .....	page 58
Right Side .....	page 59
Standard Manual Blade Gap .....	page 64
Control Panel .....	page 65
Electrical Controls .....	page 71

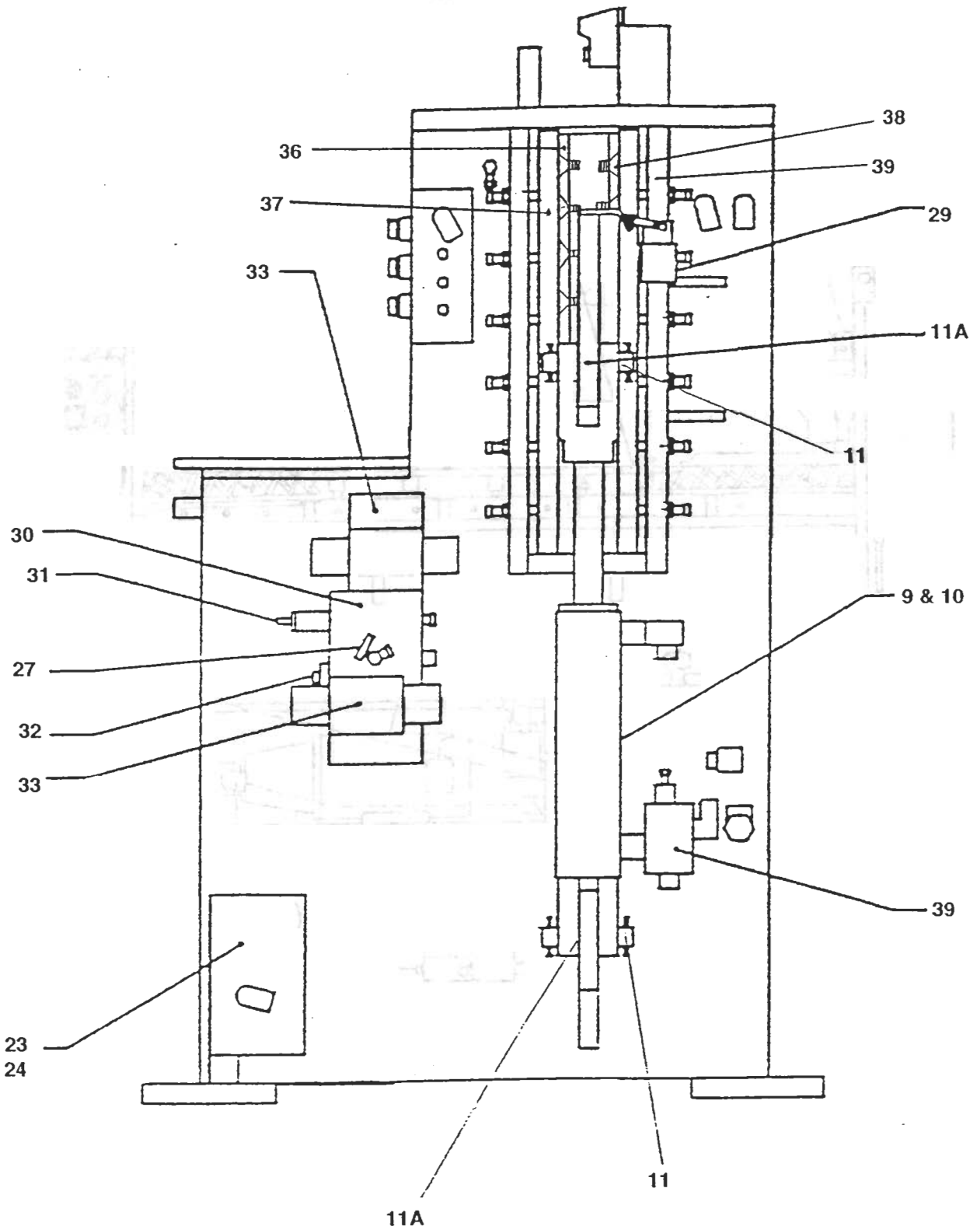
Item No. ....	Page No. ....	Part No. ....	Description .....	Qty.
(Refers to Blueprint No.)				
1 .....	57 .....	BEF22-A25 .....	Bellhousing .....	1
2 .....	57 .....	.....	Spider .....	1
26 .....	57 .....	.....	Holddown Spring .....	8-21
3 .....	57 .....	CM3313T .....	Motor - 10 hp .....	1
21 .....	57 .....	.....	Plunger Holddown .....	8-21
7 .....	57 .....	9p .....	Pump .....	1
5 .....	57 .....	AE10 .....	Return Filter and Housing .....	1
4 .....	57 .....	TM50 .....	Suction Strainer .....	1
10 .....	57 .....	.....	Breather Cap .....	1
14 .....	57 .....	.....	Sight Level .....	1
12 .....	57 .....	.....	Fill Plug .....	1
40 .....	57 .....	.....	Footswitch .....	1
35 .....	57 .....	2002 .....	Holddown Cylinder .....	2
34 .....	57 .....	.....	Digital Readout .....	1
51 .....	57 .....	9001 .....	Stop Switch Button .....	1
52 .....	57 .....	9002 .....	Run-Jog Button .....	1
53 .....	57 .....	9003 .....	Shear Button .....	1
54 .....	57 .....	.....	Rake Angle Control .....	1
55 .....	57 .....	.....	Backgauge Speed Control .....	1
56 .....	56 .....	.....	Backgauge Directional Control .....	1
23 .....	58 .....	.....	Relay .....	1
24 .....	58 .....	.....	Relay Base .....	1
9 .....	59 .....	E15123C .....	4" Right Main Cylinder .....	1
10 .....	58 .....	E15123C .....	4" Left Main Cylinder .....	1
27 .....	58 .....	.....	Pressure Gauge .....	1
11A .....	58-59 .....	10SF16 .....	Upper and Lower Bearing Assembly .....	4
29 .....	58-59 .....	.....	Limit Switch .....	3
30 .....	58 .....	84-0628B .....	Valve Block #1 .....	1
31 .....	58 .....	RPEC-FAN .....	Shear Blade Relief Valve .....	1
32 .....	58 .....	CKEB-XCN .....	Check Valve .....	2
33 .....	58 .....	DO5 .....	Directional Control Valve .....	2
59 .....	57 .....	LED .....	LED Readout .....	1
58 .....	57 .....	CUB .....	Hour Meter .....	1
39 .....	58 .....	85-0604R .....	Sequence Valve .....	1
9A-10A .....	58-59 .....	A2842 .....	Seal Kits .....	1
11 .....	58-59 .....	1003625 .....	Upper and Lower Pin .....	1
35A .....	58-59 .....	A6591 .....	Seal Kit .....	2
36 .....	58 .....	10471R .....	Bronze Gibs (Right) .....	2
37 .....	58-59 .....	104716 .....	Front Steel Gib .....	2
38 .....	58 .....	RCS .....	Recessed Cap Screw .....	14
39 .....	58-59 .....	104715 .....	Rear Steel Gib .....	2
36 .....	59 .....	10471L .....	Bronze Gibs (Left) .....	2

# 10 GAUGE & 3/16"



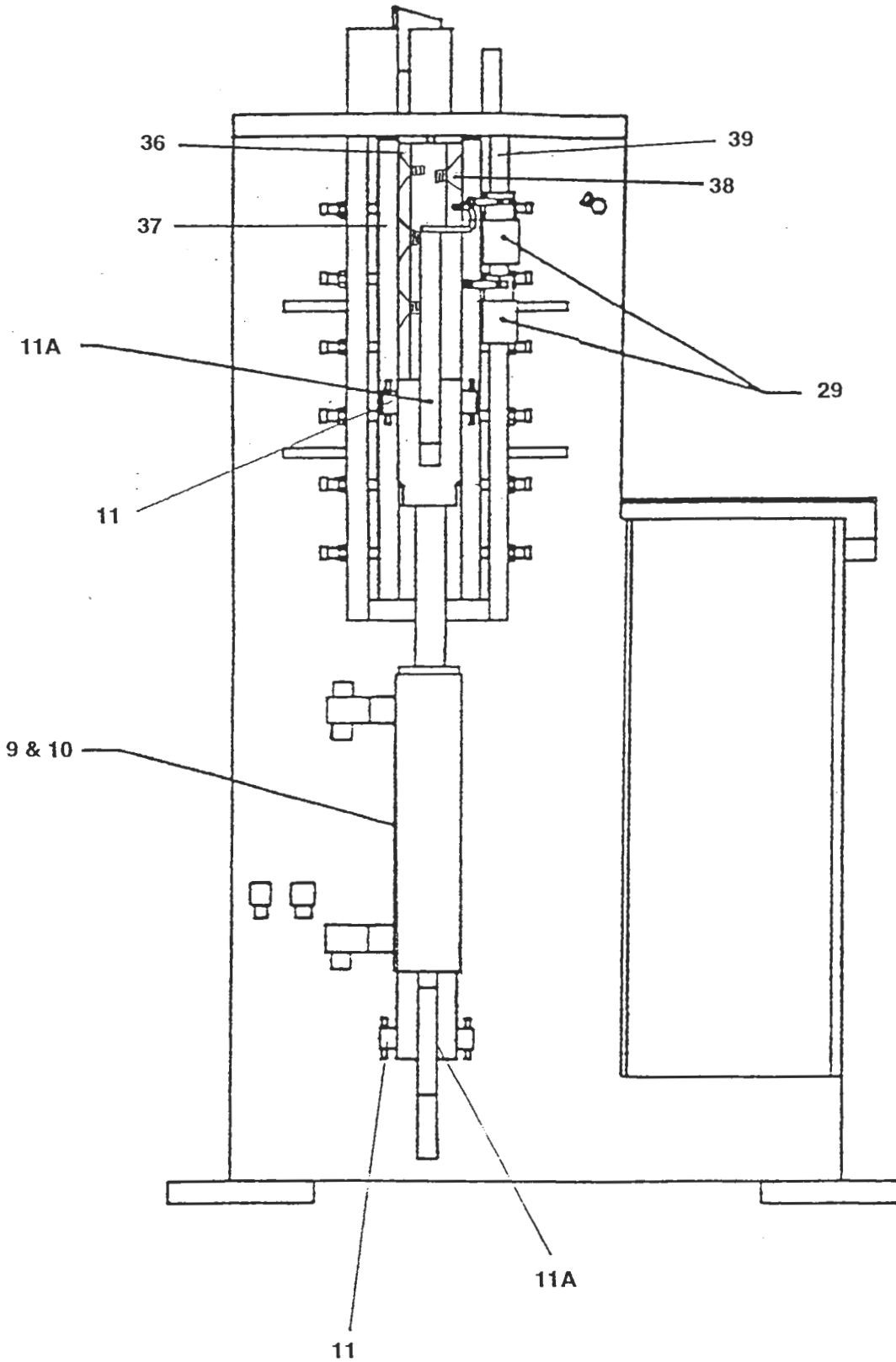
**\*ALL SAFETY COVERS AND GUARDS MUST REMAIN ON THE SHEAR AT ALL TIMES.**

10 GA. & 3/16" SHEAR  
LEFT SIDE



**\*ALL SAFETY COVERS AND GUARDS MUST REMAIN ON THE SHEAR AT ALL TIMES.**

10 GA. & 3/16" SHEAR  
RIGHT SIDE

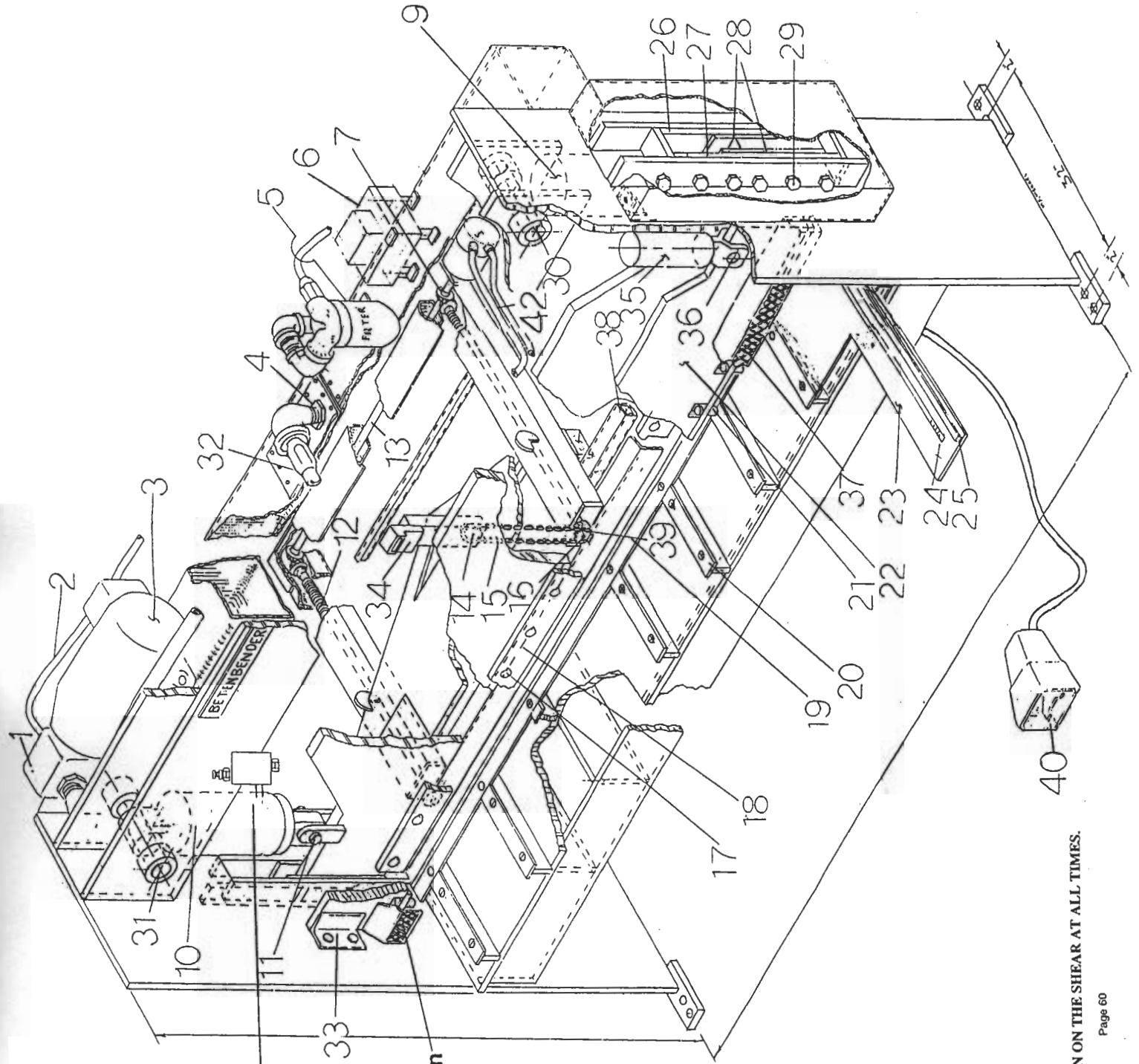


**\*ALL SAFETY COVERS AND GUARDS MUST REMAIN ON THE SHEAR AT ALL TIMES.**

1/4", 3/8", 1/2", 5/8", 3/4"

41

Safety Screen



\*ALL SAFETY COVERS AND GUARDS MUST REMAIN ON THE SHEAR AT ALL TIMES.

# Betenbender Manufacturing

## Shear Parts List

1/4", 3/8", 1/2", 5/8", 3/4"

Item No. ....	Page No. ....	Description
1 .....	62 .....	Pump
2 .....	62 .....	Pressure Line
3 .....	62 .....	Motor
4 .....	62 .....	Suction Strainer
5 .....	62 .....	Return Filter
6 .....	71 .....	Main Valve Block Manifold
7 .....	64, 69 .....	Backgauge Assembly
8 (Not Shown) .....	67 .....	Control Panel
9 .....	62 .....	Right Main Cylinder
10 .....	62 .....	Left Main Cylinder
11 .....	62 .....	Cylinder Pin (Lower)
12 .....	69 .....	Acme Screw
13 .....	69 .....	Rear Cross Shaft
17 .....	63 .....	Knife Bolt & Nut
18 .....	63 .....	Knives
19 .....	65 .....	Table Wear Strip
20 .....	65 .....	Table Runner Strip
21 .....	65 .....	Plunger Assembly
22 .....	65 .....	Holddown Assembly
23 .....	65 .....	Squaring Arm Assembly
24 .....	65 .....	Scale
25 .....	65 .....	Squaring Arm Bar
26 .....	66 .....	Rear Steel Gib
27 .....	66 .....	Front Steel Gib
28 .....	66 .....	Bronze Gibs
29 .....	66 .....	Gib Bolts & Nuts
30 .....	63 .....	Main Upper Pin
31 .....	63 .....	Upper Pin
32 .....	63 .....	Suction Line
33 .....	63 .....	Holddown Guides
35 .....	63 .....	Holddown Cylinders
36 .....	63 .....	Holddown Pins
37 .....	65 .....	Safety Screen
38 .....	64 .....	Backgauge Bar Assembly
39 .....	69 .....	Backgauge Cylinder Pins
40 .....	65 .....	Footswitch



ITEM NO.	PART NO.	DESCRIPTION	QTY
1	9p 13p 17p 21p	<b>Pump</b> 10 ga, 3/16" 1/4", 3/8" 1/2" 3/4"	1
	BEF22-A2S BEF22-A2L BEF22-B2L BEF40-B2LL	<b>Bell Housing</b> 6' - 12' x 10 ga, 3/16" 1/4", 4'-8' x 3/8" 10' x 3/8", 1/2" 3/4"	1
2	75036 75060 75084 750108 750132	<b>Pressure Hose</b> 4' shear 6' shear 8' shear 10' shear 12' shear	1
	CM3313T CM2513T CM2515T CM2535T CM4110T	<b>Motor</b> 10 hp (10 ga), 3/16" 15 hp (1/4", 3/8") 20 hp (1/2") 30 hp (5/8") 40 hp (3/4")	1
4	TM50	<b>Suction Strainer</b>	1
5	AE10 SE10	<b>Return Filter</b> 10 ga, 3/16" 1/4", 3/8", 1/2", 5/8", 3/4"	1
	SF120	<b>Filter Head</b>	1
9	E15123C E13624CO1 E16472C SB144016 SB144016 SB160030 SB192022	<b>Right Main Cylinder</b> 4" (10 ga), 3/16" 7" (1/4") 8" (4'-8' x 3/8") 9" (10'-12' x 3/8") 9" (4'-8' x 1/2") 10" (10'-12' x 1/2") 12" (3/4")	1

ITEM NO.	PART NO.	DESCRIPTION	QTY
9A	A2842 13017X SKH-C144 SKH-C160 SKH-C192	<b>Seal Kit</b> 4" (10 ga), 3/16" 7" (1/4") 9" (3/8") 10" (1/2") 12" (3/4")	1
	E15123C E13624C E12476B SB128044 SB160030 SB176009 SB176009	<b>Left Main Cylinder</b> 4" (10 ga), 3/16" 7" (1/4") 7" (4'-8' x 3/8") 8" (10'-12' x 3/8") 10" (4'-8' x 1/2") 11" (10'-12' x 3/8") 11" (3/4")	1
10A	A2842 13017X SKH-C128 SKH-C144 SKSH- 176002	<b>Seal Kit</b> 4" (10 ga), 3/16" 7" (1/4") 8" (3/8") 9" (1/2") 11" (3/4")	1
	1003625 175006 25007 25008 3009	<b>Cylinder Pin (Lower)</b> (10 ga), 3/16" (1/4") (3/8") (1/2") (3/4")	1
11A	10 SF16 17 SF28 25 SF40 30 SF48	<b>Lower Bearing Assy</b> (10 ga), 3/16" (1/4") (3/8", 1/2") (3/4")	4 4 2 2

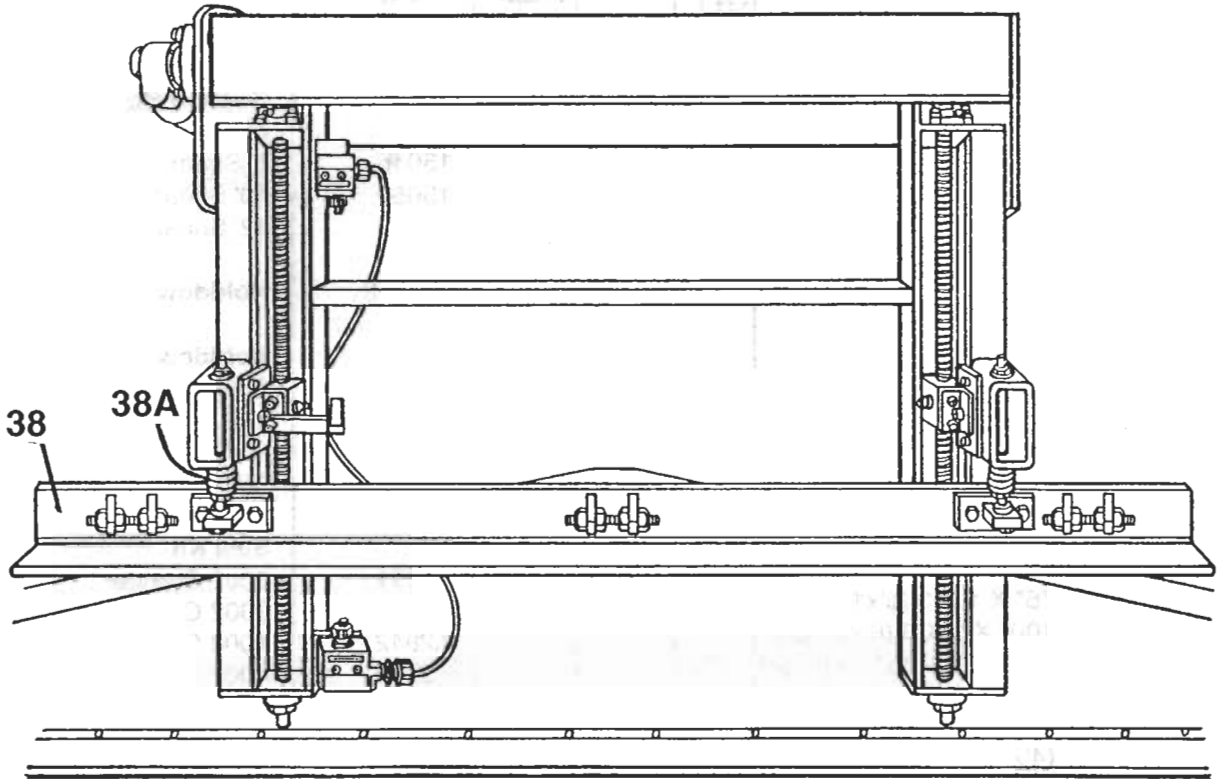
\*ALL SAFETY COVERS AND GUARDS MUST REMAIN ON THE SHEAR AT ALL TIMES.

ITEM NO.	PART NO.	DESCRIPTION	QTY	
17		<b>Knife Bolt &amp; Nut</b>		
		4'	14	
		6'	20	
		8'	26	
		10'	32	
		12'	36	
		50035	1/2 X 3.5"	-
		62540	5/8 X 4"	-
		62545	5/8 X 4.5"	-
		75045	3/4 X 4.5"	-
	7505	3/4 X 5"	-	
	7506	3/4 X 6"	-	
	7507	3/4 X 7"	-	
18		<b>Knives-Mark II</b>		
		62" X 1/2 X 2 (5' x10 ga)	2	
		76" X 1 X 3 (6'x10 ga)	2	
		100" X 1 X 3 (8'x10 ga)	2	
		124" X 1 X 3 (10'x10 ga)	2	
		148" X 1 X 3 (12'x10 ga)	2	
		520001	52" X 4 X 1 (4'x1/4", 3/8", 1/2")	2
		760002	76" X 4 X 1 (6'x1/4", 3/8", 1/2")	2
		1000005	100" X 4 X 1 (8'x1/4", 3/8", 1/2")	2
		1240007	124" X 4 X 1 (10'x1/4", 3/8", 1/2")	2
		1480007	148" X 4 X 1 (12'x1/4", 3/8", 1/2")	2
		05520002	52" X 1.125 X 5 (4'x3/4")	2
		05760003	76" X 1.125 X 5 (6'x3/4")	2
		0510000006	100" X 1.125 X 5 (8'x3/4")	2
		051240008	124" X 1.125 X 5 (10'x3/4")	2
	30		<b>Main Upper Pin</b>	2
	31		<b>Upper Pin</b>	
17513		(1/4") 3/16"	2	
25021		(3/8")	2	
25022		(1/2")	2	
	30023	(3/4")	2	

ITEM NO.	PART NO.	DESCRIPTION	QTY
32		<b>Suction Hose</b>	
	15036	4'-6' Shear	1
	15046	8' Shear	1
	15060	10' Shear	1
	15072	12' Shear	1
33	705340	<b>Holddown Guides</b>	2
35		<b>Holddown Cylinder</b>	
	2002	10 ga, 3/16"	2
	3002	1/4"	2
	4008	3/8", 1/2"	2
	4002	3/4"	2
35A		<b>Seal Kit</b>	
	A6591	2002 Cylinder	
	A2525	3002 Cylinder	1
	A2842	4008 Cylinder	1
	A2842	4002 Cylinder	1
36		<b>Holddown Pins</b>	
	6253500	.625 x 3.5 (10 ga) 3/16"	
	1002500	1 X 2.5 (1/4")	4
	1003000	1 X 3 (3/8", 1/2")	4
	1003500	1 X 3.5 (3/4")	4

\*ALL SAFETY COVERS AND GUARDS MUST REMAIN ON THE SHEAR AT ALL TIMES.

# BACKGAUGE

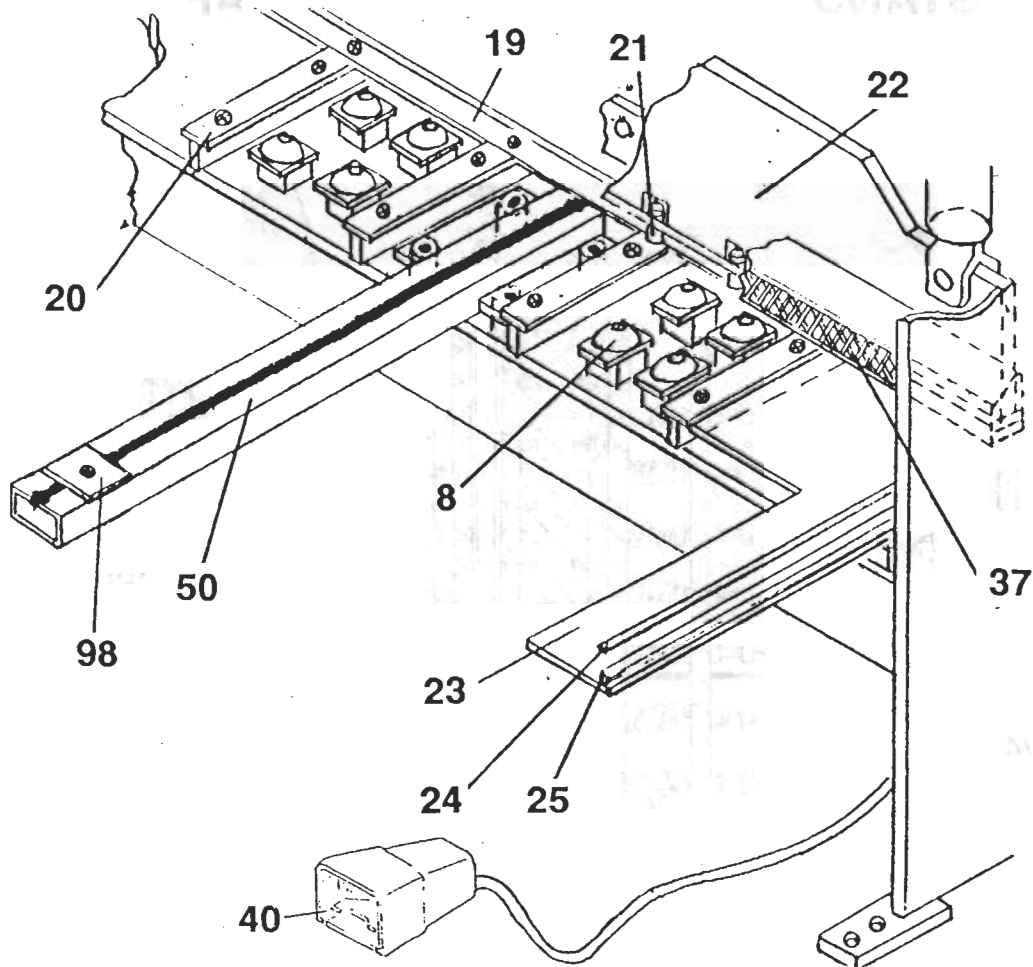


(View From Bottom)

ITEM NO.	PART NO.	DESCRIPTION	QTY
38	70548 70572 70596 705120 705144	<b>Backgauge Bar Assy</b> 4' Shear 6' Shear 8' Shear 10' Shear 12' Shear	1
38A	705500	<b>Shock Absorber Springs</b>	2

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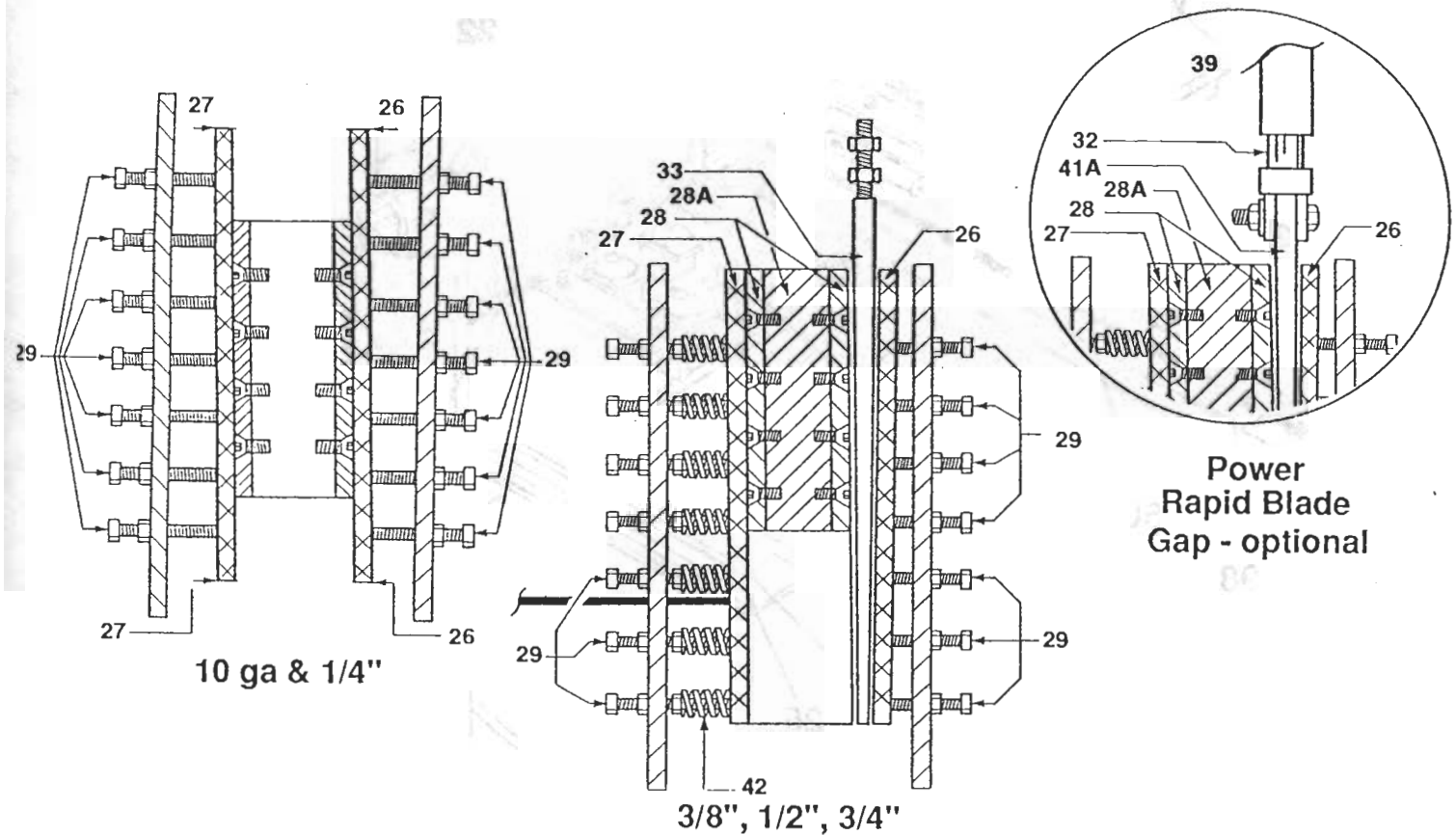
# TABLE TOP WITH OPTIONS



ITEM NO.	PART NO.	DESCRIPTION	QTY	ITEM NO.	PART NO.	DESCRIPTION	QTY
19	705414	<b>Table Wear Strip</b> (size of machine)	1	24	S048	<b>Scale</b> Scale 0-48	2
20	705415	<b>Table Runner Strip</b> (size of machine)	3-12		S072	Scale 0-72	3
21	705416	<b>Plunger Assembly</b> (size of machine)	8-21		S096	Scale 0-96	4
22	705417	<b>Holddown Assembly</b> (size of machine)	1		S0120	Scale 0-120	5
23	SA4-12	<b>Squaring Arm</b>	1	25	SB4-10	<b>Squaring Bar</b>	1
97		<b>Spring Holddown</b>	8-21	37	705418	<b>Safety Screen</b> (size of machine)	1
				40	B3A	<b>Footswitch</b>	1
				8	705419	<b>Ball Transfer</b>	1-6
				50	705420	<b>Support Arm</b>	1-3
				98	705444	<b>Flip Up Stops</b>	1

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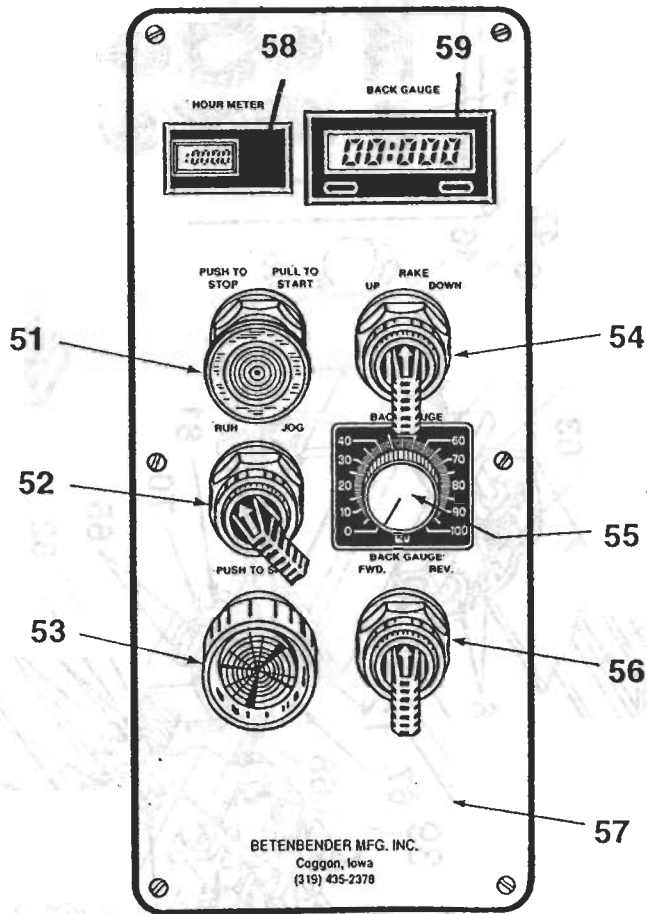
# STANDARD MANUAL BLADE GAP



ITEM NO.	PART NO.	DESCRIPTION	QTY
26	704715	Rear Steel Gib	2
27	704716	Front Steel Gib	2
28	704717L	Bronze Gibs (Left)	2
28	704717R	Bronze Gibs (Right)	2
28A	RCS	Recessed Cap Screw for Bronzing Gibs	
		(10 ga, 3/16", 1/4")	7
		(3/8", 1/2", 3/4")	9
29	704719	Gib Bolts	28
29	704720	Gib Nuts	28
39	3004	Hydraulic Cylinder	1
		3 position Power Rapid Blade Gap	
	3002	2 Position Power Rapid Blade Gap	
39A	A2525	Seal Kit	1
41	704721	Taper Slide	2
41A		Power Taper	1
42		Spring	13

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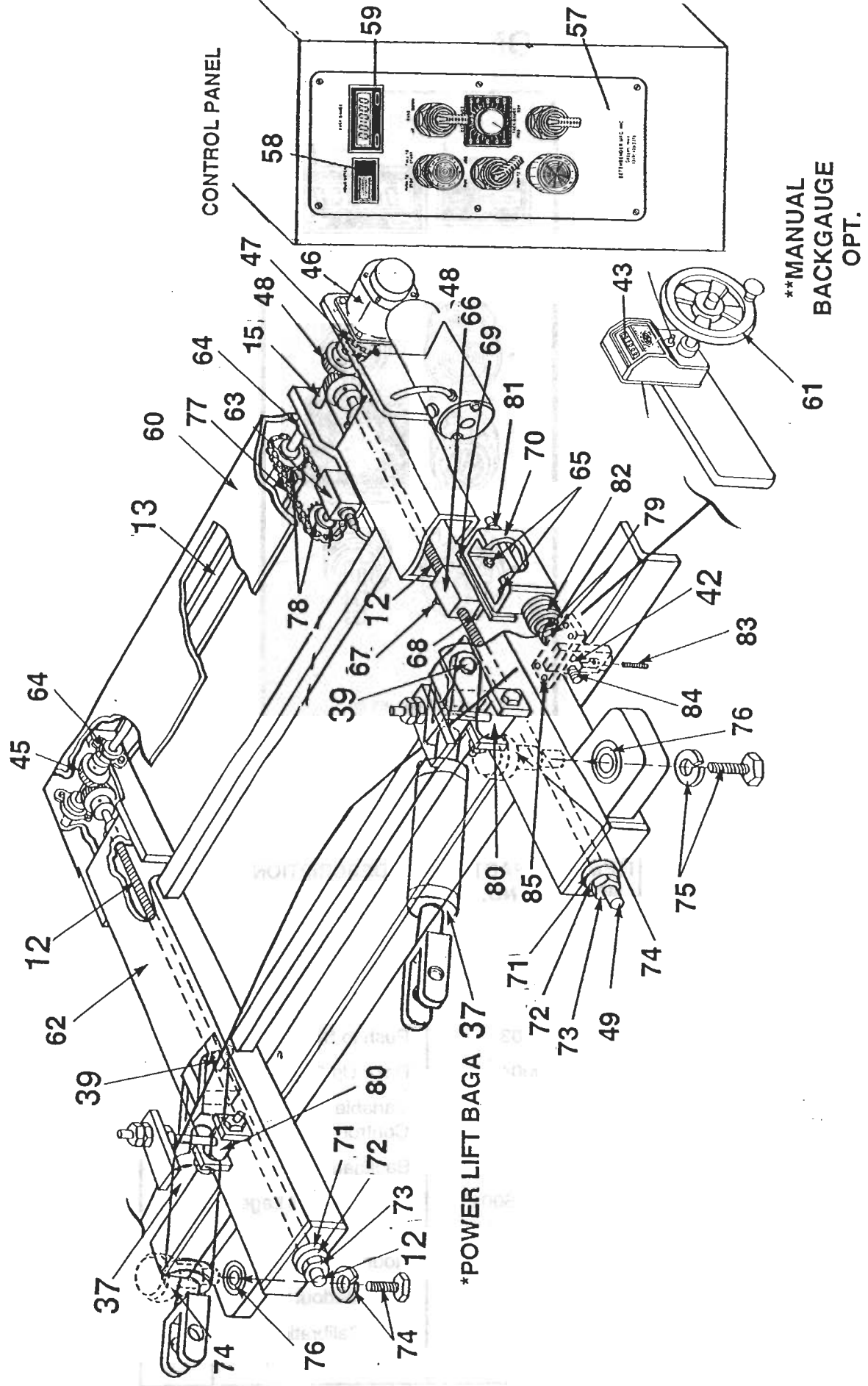
# CONTROL PANEL



ITEM NO.	PART NO.	DESCRIPTION	QTY
51	9001	Push to Stop/ Pull to Start	1
52	9002	Run-Jog	1
53	9003	Push to Shear	1
54	9004	Rake Up-Down	1
55	9007	Variable Speed Control	1
56	9006	Backgauge Fwd-Rev	1
57	CPS001	Control Panel Legend	1
58	CUB	Hour Meter	1
59	LED	Led Readout	1
		Dual Calibration (Opt. not shown)	1

**\*ALL SAFETY COVERS AND GUARDS MUST REMAIN ON THE SHEAR AT ALL TIMES.**

# STANDARD MANUAL LIFT BACKGAUGE 3/8" , 1/2" , 3/4"



\*ALL SAFETY COVERS AND GUARDS MUST REMAIN ON THE SHEAR AT ALL TIMES.

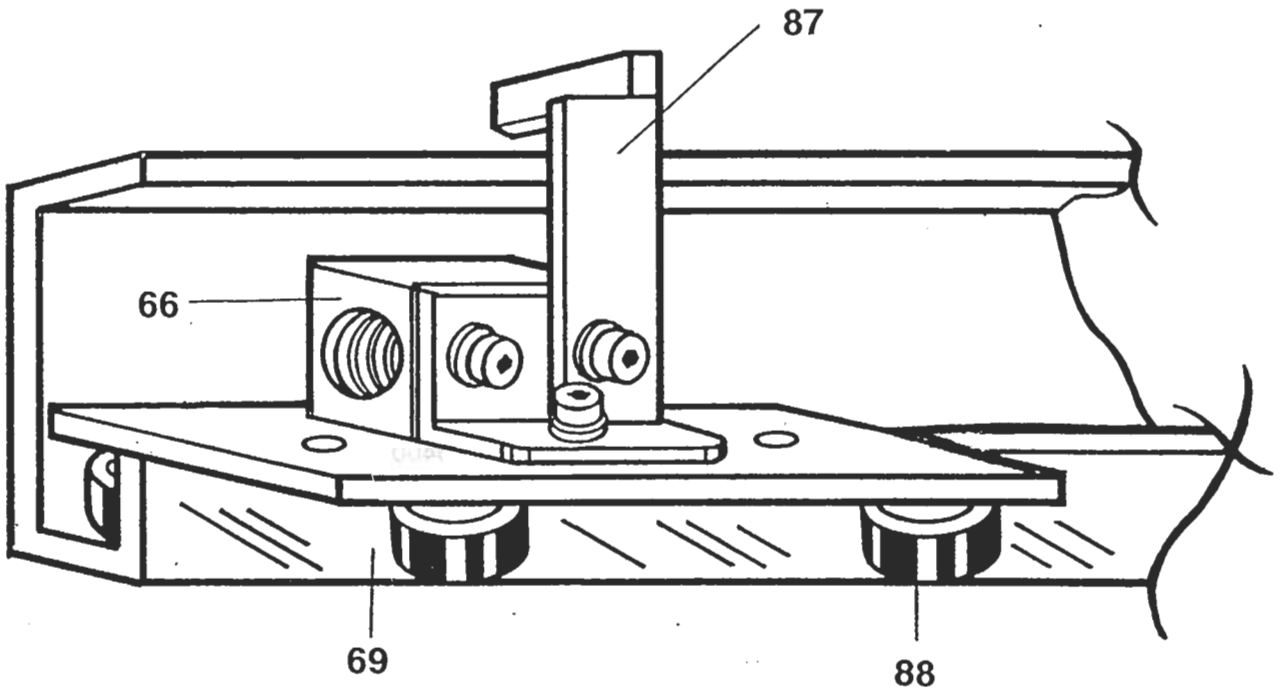
ITEM NO.	PART NO.	DESCRIPTION	QTY
43	06179T	Manual Baga (Opt.) Readout (Opt.)	1
44	M10258	Tapered Gear	3
45	Mk10258	Tapered Gear	1
46	GPF13514	Electric Motor	1
47	LJ100	Coupling	2
48	LJ095	Spyder	1
12	705636	Screw	2
13	705611	Cross Shaft	1
60	705612	Cover Shield	1
58	CUB	Hour Meter	1
57	CPS001	Control Panel Legend	1
61	06175	Drive Wheel (Opt.)	1
62	705615	Frame	1
63	RPGQ0200	Encoder	1
64	124645	Bearing	5
59	LED	LED Readout	
66	705616	Bronze Nuts	2
67	705617	Grease Fitting	2
68	705618	Angle Bracket	2

ITEM NO.	PART NO.	DESCRIPTION	QTY
65	705619	Adjusting Screw	4
69	705621	Guide Plate	2
70	705622	Gib	2
71	705623	Hub	2
72	124646	Bearing	2
73	705624	Locknut	2
74	BBGWM	Weld on Mount	2
75	500200	Bolt 1/2 X 2	2
76	705625	Lockwashers	2
37	300400	Cyl-Lift (Opt)	2
39	705627	Pins	4
77	RS25	Chain Drive (Opt.)	1
78	25B24	Sprockets (Opt.)	2
79	JM14	Nuts	3
80	BBGM2	Mounts	2
81	KN14	Locknut	2
82	705500	Spring	2
83	DV38163	Set Screw	2
84	BBGBS	Bolt Spring Assy	2
85	DV121	Bolts 1/2 X 1	4
86	B-500	Electrical Box (10 ga & 3/16", 1/4")	1
	B-500-15	(3/8", 1/2", 5/8", 3/4")	
89		Backbar Mount	1

**\*ALL SAFETY COVERS AND GUARDS MUST REMAIN ON THE SHEAR AT ALL TIMES.**



# BACKBAR CARRIER (View from side)

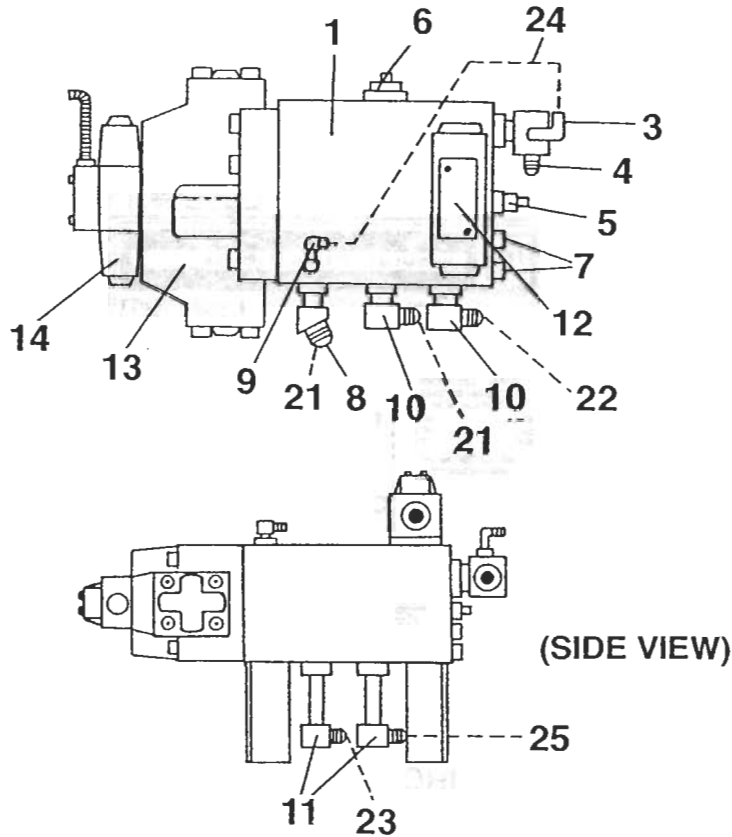


ITEM NO.	PART NO.	DESCRIPTION	QTY
66	705820	Bronze Nut	2
69	705821	Guide Bar	2
	705822	Limit Switch (Not Shown)	2
87	705823	Trip Arm	1
88	705824	Cam Followers	8

**\*ALL SAFETY COVERS AND GUARDS MUST REMAIN ON THE SHEAR AT ALL TIMES.**

# MAIN BLOCK ASSEMBLY

## 1/4", 3/8", 1/2", 5/8", 3/4"

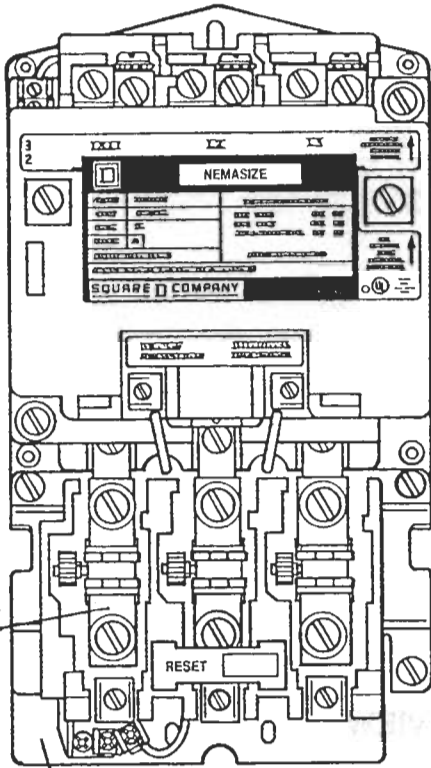


ITEM NO.	PART NO.	DESCRIPTION	QTY
1	85-0327	Main Control Block	1
2	5365x8	Fitting	1
3	5405x4x4	Fitting	1
4	5515x8x12	Fitting	1
5	FREA-LAN	Comp. Flow Valve	1
6	RPGA-FAN	Main Relief	1
7	CXCB-XCN	Check Valve	2
8	5515x4	Fitting	1
9	6801-4-4	Fitting	1
10	TF5515X8	Fitting	3
11	6801L12	Fitting	2
12	D05	Control Valve	2
13	D08	Control Valve	1
14	111652	Coil	2

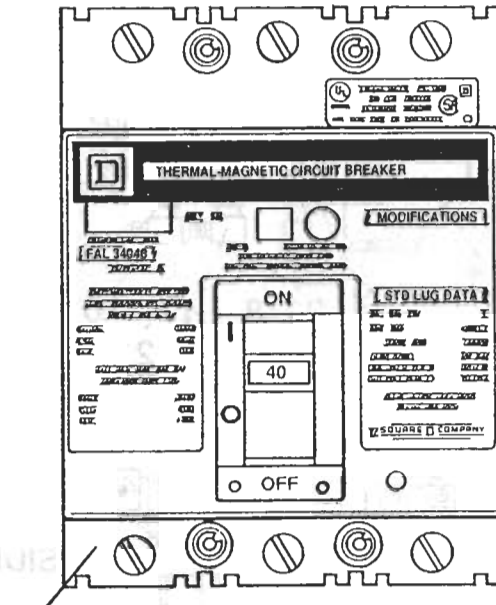
ITEM NO.	PART NO.	DESCRIPTION	QTY
20	5515x8x10	Fitting	1
21	75072	Hose	1
22	50060	Hose	2
23	50024	Hose	2
24	25024	Hose	1
25	75030	Hose	2

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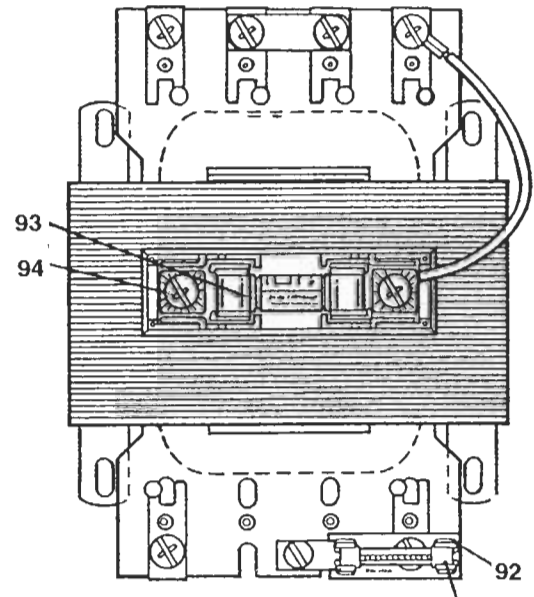
# ELECTRICAL CONTROLS



90 STARTER



95 CIRCUIT BREAKER



91 TRANSFORMER

ITEM NO.	PART NO.	DESCRIPTION	QTY
90	G2 G3	Starter Assy (10 ga), 3/16" (1/4", 3/8", 1/2", 5/8", 3/4")	1
91	MDL5	Bottom Fuse	1
92	636-7412	Bottom Fuse Holder (1/4" - 3/4")	1
93	FNQ	Top Fuse (10 ga - 3/4") (10 ga), 3/16"	1
94	BM6031B	Top Fuse Holder	1
95	FAL340	Circuit Breaker Disconnect (according to amperage)	1
96	B-	Heaters (according to amperage)	3

\*ALL SAFETY COVERS AND GUARDS MUST REMAIN ON THE SHEAR AT ALL TIMES.

# REPLACEMENT FILTERS

## *10 ga. 3/16" BETENBENDER SHEAR*

ZINGA AE-10	VESCOR 70134	WIX 51551	LHA SPE-15-10	FRAM P-1653 P-1653A
HYCON MFE-80-10-2	AC DELCO PF-26	BALDWIN BT-839-10	PARKER 925516	DONALDSON P15-1553

## *1/4", 3/8", 1/2", 5/8", 3/4", BETENBENDER SHEARS*

ZINGA SE-10 LE-10*	VESCOR 70158 70172*	WIX 51759	LHA SPE-50-25 SPE-60-25*	FRAM PH-3567
HYCON MFE160-25-2 MFE160/1-25-2*	AC DELCO PF-2023	BALDWIN BT-387 BT-388*	PARKER 926170 927736*	DONALDSON P16-5879 P16-5880*

*\*Long type filter*

# RECORDS

EDGE

DATE

BY WHOM

#1

#2

#3

#4

Sharpened or Replaced

#1

#2

#3

#4

Sharpened or Replaced

#1

#2

#3

#4

Oil & Filter Change

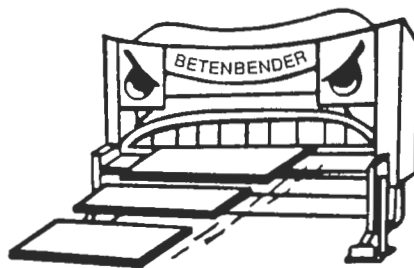
Parts Replaced

# SUGGESTED HORIZONTAL CLEARANCES

Thickness Mat'l To Be Sheared	COLD REDUCED SHEETS OR STRIP						HOT ROLLED SHEETS OR STRIP						HOT ROLLED PLATES					
	.005" - .015"		.016" - .032"		.033" - .075"		.062" - .125"		.126" - .187"		.188" - .250"		.251" - .325"		.326" - .625"		Over .625"	
	Blade Grade	Clear- ance	Blade Grade	Clear- ance	Blade Grade	Clear- ance	Blade Grade	Clear- ance	Blade Grade	Clear- ance	Blade Grade	Clear- ance	Blade Grade	Clear- ance	Blade Grade	Clear- ance	Blade Grade	Clear- ance
HIGH CARBON STEEL	MARK I .005	MARK I to .001	MARK I .002	MARK I to .003	MARK I to .010	MARK I to .002	MARK I to .003	MARK I to .005	MARK I to .018	MARK I to .007	MARK I to .027	MARK I to .035	MARK I to .016	MARK I to .046	MARK II to .021	MARK II to .088	MARK II to .027	MARK II to .055
ALLOY STEEL	MARK I .005	MARK I to .001	MARK I to .003	MARK I to .010	MARK I to .003	MARK I to .005	MARK I to .017	MARK I to .005	MARK I to .018	MARK I to .027	MARK I to .037	MARK I to .013	MARK I to .048	MARK II to .023	MARK II to .092	MARK II to .023	MARK II to .045	MARK II to .045
ARMOR PLATE	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MILD STEEL	MARK I .005	MARK I to .001	MARK I to .003	MARK I to .010	MARK I to .003	MARK I to .005	MARK I to .017	MARK I to .005	MARK I to .018	MARK I to .027	MARK II to .037	MARK II to .013	MARK II to .048	MARK II to .023	MARK II to .092	MARK II to .023	MARK II to .045	MARK II to .045
STAINLESS STEEL	MARK I .005	MARK I to .001	MARK I to .003	MARK I to .010	MARK I to .006	MARK I to .001	MARK I to .020	MARK I to .005	MARK I to .011	MARK I to .030	MARK I to .041	MARK I to .014	MARK I to .041	MARK II to .027	MARK II to .100	MARK II to .027	MARK II to .055	MARK II to .055
SKELP	MARK I .001	MARK I to .003	MARK I to .004	MARK I to .008	MARK I to .003	MARK I to .004	MARK I to .011	MARK I to .004	MARK I to .018	MARK I to .018	MARK I to .023	MARK I to .013	MARK I to .029	MARK II to .023	MARK II to .037	MARK II to .023	MARK II to .045	MARK II to .045
SILICON STEEL	MARK I .005	MARK I to .001	MARK I to .003	MARK I to .010	MARK I to .008	MARK I to .001	MARK I to .020	MARK I to .004	MARK I to .018	MARK I to .027	MARK I to .036	MARK I to .005	MARK I to .008	MARK II to .021	MARK II to .042	MARK II to .008	MARK II to .017	MARK II to .017
COPPER	MARK I .005	MARK I to .001	MARK I to .003	MARK I to .010	MARK I to .002	MARK I to .001	MARK I to .004	MARK I to .004	MARK I to .006	MARK I to .006	MARK I to .008	MARK I to .008	MARK I to .008	MARK II to .011	MARK II to .021	MARK II to .021	MARK II to .035	MARK II to .035
ALUMINUM	MARK I .005	MARK I to .001	MARK I to .003	MARK I to .010	MARK I to .002	MARK I to .001	MARK I to .020	MARK II to .008	MARK I to .018	MARK I to .021	MARK I to .018	MARK I to .010	MARK I to .018	MARK II to .022	MARK II to .042	MARK II to .017	MARK II to .035	MARK II to .035
BRASS	MARK I .005	MARK I to .001	MARK I to .003	MARK I to .010	MARK I to .003	MARK I to .001	MARK I to .020	MARK I to .008	MARK I to .011	MARK I to .011	MARK I to .018	MARK I to .010	MARK I to .018	MARK II to .022	MARK II to .042	MARK II to .017	MARK II to .035	MARK II to .035
TITANIUM	MARK I .005	MARK I to .001	MARK I to .003	MARK I to .010	MARK I to .003	MARK I to .001	MARK I to .020	MARK I to .008	MARK I to .011	MARK I to .011	MARK I to .018	MARK I to .010	MARK I to .018	MARK II to .022	MARK II to .042	MARK II to .027	MARK II to .055	MARK II to .055
MAGNESIUM	MARK I .005	MARK I to .001	MARK I to .003	MARK I to .010	MARK I to .005	MARK I to .001	MARK I to .020	MARK I to .008	MARK I to .011	MARK I to .011	MARK I to .018	MARK I to .010	MARK I to .018	MARK II to .022	MARK II to .042	MARK II to .017	MARK II to .035	MARK II to .035

## TOLERANCES GIVEN IN INCHES

NOTE: Suggested clearances are to be used only as a guideline.  
For additional application assistance, call toll free 1-800-354-9872.



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